

REMARKS

The application has been amended and is believed to be in condition for allowance.

Claims 1-54 are pending, claims 1, 20, 40, and 47 being independent.

There are no formal matters outstanding.

Claims 1-7, 10-19, 20-25, and 28-39 stand rejected as obvious over DOI (JP 03-116898) in view of MURAMATSU et al. 5,703,665.

Claims 8, 9, 26, and 27 stand rejected as obvious over DOI in view of MURAMATSU et al. and further in view of ASAI et al. 6,409,159.

Claims 40-54 stand rejected as obvious over ASAI et al. in view of DOI and further in view of MURAMATSU et al.

Claim 1 has been reformatted to clarify the recited features of the invention. In claim 1, there is recited a signal processing circuit substrate having a through-hole formed through the substrate. Next is recited a mounting member positioned opposite the through-hole and electrically connected at an edge thereof to a first surface of the signal processing circuit substrate. The next recitation is to a variable value device (e.g., a varistor) electrically and mechanically mounted on a first surface of the mounting member, such a device having a

variable value and including a value adjustment portion through which the variable value is adjusted. The final recitation is that the value adjustment portion faces the through-hole.

This is consistent with the disclosure of the present invention. See, at least, for example, any of Figures 5B, 6F, 7E, 8, and 9B.

DOI discloses in Figure 1, a resistor 16 which is variable. The resistor 16 is mounted on first printed circuit board 12. There is an insertion hole 17 on a second board 13. The first and second boards are spaced apart by way of elements 14.

The Official Action acknowledges that DOI does not disclose the printed circuit board being located on opposite edges of a signal processing circuit substrate. For this feature, MURAMATSU et al. is offered. The Official Action refers to interposing units located at the vertices of an isosceles triangle (column 1, lines 52-62 and column 2, lines 1-3). Referring to Figure 3 of MURAMATSU et al., these interposing units are identified as Q1-Q3. The specification discloses these as being spacer elements to separate the elements comprising a liquid crystal display.

Applicants understand the Official Action to be applying the teaching of MURAMATSU et al. as being obvious to put

spacers at parameter locations between two board elements of a liquid crystal display.

Even if DOI is modified in this manner, the recited structure of the rejected claims does not result.

Referring to claim 1, see that there is recited a signal processing circuit substrate having a through-hole. This recitation must necessarily read on second printed circuit board 13 of DOI. Claim 1 also recites a mounting member positioned opposite the through-hole and electrically connected at an edge thereof to a first surface of the signal processing circuit substrate. The resistor 16 of DOI is not mounted to such a mounting member. See that resistor 16 of DOI is mounted to amplifier 19 which, in turn, is mounted to first printed circuit board 12.

Accordingly, the recitations of claim 1 are non-obvious over the combination of DOI plus MURAMATSU et al. as this combination would not teach all the recited features of the claim.

Consider claim 2 next. Claim 2 originally recited that the mounting member was comprised of a flexible printed circuit. Applicants do not see that the Official Action has pointed to any flexible printed circuit. This feature is not believed to be disclosed by either DOI alone or in combination with MURAMATSU et

al. This claim has been amended to further limit the recitation requiring that the flexible printed circuit electrically connect the edge of the mounting member to the first surface of the signal processing circuit substrate at a region proximate the through-hole. This recitation is clearly believed to be non-obvious over the pending combination of references.

Similarly, claim 3 recites that the mounting member is composed of flexible material. This recitation does not appear to have been addressed by the Official Action. Applicants do not see that DOI makes this disclosure. Applicants note that the Official Action asserts that the variable resistor 16 of DOI is in a floating condition. Applicants do not see this; however, applicants have amended this recitation to require that the device be supported by the mounting member in a displaceable floating condition. This can be seen at least in Figure 5B of the present application where the flexible printed circuit elements 16 electrically connect opposite edges of the mounting member to the first surface of the signal processing substrate 13 so that the device is supported by the mounting member in a displaceable floating condition above the through-hole 31. See that the diameter of the through-hole is greater than the exterior diameter of the resistor 15. Accordingly, given the flexible nature of flexible printed circuit 16 and the oversizing

of through-hole 31, the resistor 15 is displaceably floatable within the through-hole opening. Such a structure is not provided in the applied art.

The recitations of claim 4 are also not seen from the applied combination. Indeed, note that the claim 4 recitations require that terminals of the variable device, located at three corners of the variable device, are fixed onto the first surface of the signaling processing circuit substrate. There is no disclosure in the applied references of doing this. Indeed, the disclosure as to how variable resistor 16 is mounted to amplifier 19 is not detailed. In view of this, one cannot fairly say that this recitation is taught or suggested by the references either individually or in combination.

See that claim 7 recites that the area of the through-hole is greater than the actual area occupied by the variable value device. This does not appear to be disclosed by DOI. Rather, DOI appears to disclose a relatively small through-hole 17 whereas the volume resistor 16 appears to have a perimeter much greater than the diameter of the through-hole 17. Again, the volume resistor is not seen as being allowed to move.

Claim 10 recites a plurality of reinforcing pads which fix the mounting member onto the first surface of the signal

processing circuit substrate. Applicants do not see these disclosed.

Similarly, applicants do not see the claim 11 recitations of such pads being located on a diagonal line passing through the center of the mounting member. The recitations of claims 12-15 relate to ensuring that the mounting member is properly fixed to the signal processing substrate. The Official Action indicates that these are taught by DOI; however, applicants do not see these features being disclosed.

In view of the above, independent claim 1 as well as the claims depending therefrom, is believed to be allowable.

The Official Action also rejected independent claim 20 in view of these same references. Independent claim 20 as well as the claims depending therefrom, is believed to be allowable for the reasons outlined above.

The rejection of claims 40-54 (including independent claims 40 and 47) appears to be based on using techniques taught by ASAI et al. as applied to the offered combination of DOI and MURAMATSU et al. As the combination of DOI and MURAMATSU et al. does not teach the recited structure, it follows that the combination with the further method teachings of ASAI cannot render obvious the recited method steps.

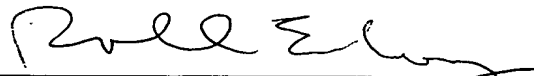
For example, see the different recited steps of bending a flexible member. No such flexible member has been identified in DOI and accordingly, the required flexible member is unavailable for bending.

In summary, the proposed combination does not result in the structure recited and cannot result in the recited method, the structure being necessary to execute the recited method being unavailable. In view of this, reconsideration and allowance of all the pending claims are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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